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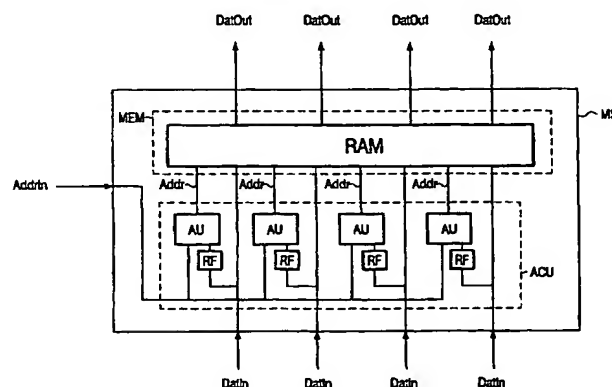
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(54) Title: **METHOD AND APPARATUS FOR ACCESSING MULTIPLE VECTOR ELEMENTS IN PARALLEL**



(57) **Abstract:** Vector processing is a suitable technique for processing applications that have large computational demands. Vector processors provide high-level operations that work on vectors, i.e. linear arrays of numbers. Vector operations can be made faster than a sequence of scalar operations on the same number or data items. Typical applications where vector processing can be used is the domain of audio and video processing. A vector memory system has a large data width, which allows retrieving a complete vector of data elements in one memory access using a single memory address. Subsequently, these data elements can be processed in parallel. However, when using vector memory systems the problem of vector alignment and ordering of a set of elements of a vector can occur. The present invention provides an improved method for vector alignment and ordering of vector elements in a computer system comprising a processor (PROC) and a multi-port memory (MEM), resulting in a better performance. The first step comprises passing of a base memory address to an address configuration unit (ACU). Next, defining a set of memory addresses by the address configuration unit (ACU) using the base memory address and a configuration instruction for configuring the address configuration unit. Finally, transmitting a vector to or from the multi-port memory (MEM) using the set of memory addresses.



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